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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,923	10/29/2003	Christoph D. Karp	131-US	9644
32763	7590	07/16/2004	EXAMINER	
NANOSTREAM, INC. 580 SIERRA MADRE VILLA AVE. PASADENA, CA 91107-2928			CYGAN, MICHAEL T	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,923

Applicant(s)

KARP ET AL.

Examiner

Michael Cygan

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,4-9,11-18 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 2,3,10 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/18/03, 01/16/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: IDS 03/18/04.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 4, 5, 6, 12, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ericson (Anal. Chem. 2000) in view of Huber (US 4,165,219). Ericson teaches a microfluidic HPLC comprising a microfluid separation column having an optical detection region bounded by a transmissive window; see Figure 2. The separation column is filled with stationary phase material formed as a porous monolith by polymerizing continuous beds within the channels of the microchip; see page 83, right hand column. The microchip is substantially planar and formed from a plurality (two) or substantially planar device layers; see Figure 2. Ericson teaches operation at 22 bar, equaling 320 psi; see Figure 9 caption. Ericson teaches the claimed device except for a porous material disposed downstream of the optical detection region and acting to elevate the backpressure.

Huber teaches a HPLC device having separation column, optical detection region, and a "braking" column disposed downstream of the optical detection region to elevate the pressure in the detector cell; see column 2 lines 5-23 and column 3 line 1 through column 4 line 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a second column downstream of the detection region as taught by Huber in the invention taught by Ericson to form a backpressure column, since Huber teaches that this allows analysis of solutions which tend to evolve gas; see column 2 lines 5-23.

2. Claims 7-9, 13-18, 20, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ericson (Anal. Chem. 2000) in view of Huber (US 4,165,219) as applied to claim 1, further in view of Soga (US 2003/0230524 A1). The claims are considered to be taught except for the device layers being impenetrably bound, metal free, and stencil; and the layers comprising a fluidic distribution network including a plurality of columns leading to a plurality of detection regions each having light source and detector. Soga teaches a HPLC device having a fluidic distribution network comprising mobile phase supply, separation columns, optical detection regions each having light source and detector, where the device layers are impenetrably bound, metal free, and stencil; see entire document, especially Figure 1, paragraphs 0007, 0010-0012, 0025, 0031-0035, and 0038-0044. It would

have been obvious to use a fluidic distribution network comprising mobile phase supply, separation columns, optical detection regions each having light source and detector, where the device layers are impenetrably bound, metal free, and stencil as taught by Soga in the invention taught by Ericson to form a sensing array, since Soga teaches the advantages of speed of processing, high reproducibility, low fluid resistance, and high separation performance; see paragraph 0007.

3. Claims 1, 4, 6, 11, 12, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ericson (Anal. Chem. 2000) in view of Shimada (US 4,137,161). Ericson teaches a microfluidic HPLC comprising a microfluid separation column having an optical detection region bounded by a transmissive window; see Figure 2. The separation column is filled with stationary phase material formed as a porous monolith by polymerizing continuous beds within the channels of the microchip; see page 83, right hand column. The microchip is substantially planar and formed from a plurality (two) or substantially planar device layers; see Figure 2. Ericson teaches operation at 22 bar, equaling 320 psi; see Figure 9 caption. Ericson teaches the claimed device except for a porous material disposed downstream of the optical detection region and acting to elevate the backpressure.

Shimada teaches a HPLC device having separation column, optical detection region, and a "flow passage resisting member" which may take the

form of a packed column (a "tube packed with filler") disposed downstream of the optical detection region to elevate the pressure in the detector cell; see Figure 1 and column 2 line 41 through column 3 line 18. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a second column downstream of the detection region as taught by Huber in the invention taught by Ericson to form a backpressure column, since Shimada teaches that this allows analysis of solutions which tend to evolve gas; see column 3 lines 13-15.

Allowable Subject Matter

4. Claims 2, 3, 10, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art neither discloses nor fairly teaches a planar porous membrane downstream of an optical detection region in a device as claimed.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoffman (US 6,499,337 B2) discloses a particulate sand column downstream of a detector in a separation-analysis apparatus.

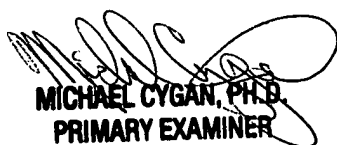
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is (571) 272-2175. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Cygan
Primary Examiner
Art Unit 2855



MICHAEL CYGAN, PH.D.
PRIMARY EXAMINER